Landbird Monitoring Protocol for Klamath Network Parks

Standard Operating Procedure (SOP) #1: Preparations and Equipment

Version 1.0

Revision History Log:

Previous Version	Revision Date	Author	Changes Made	Reason for Change	New Version

This SOP explains what procedures will be completed prior to implementing the field season, including reviewing the budget, hiring the field crew, reviewing equipment needs, preparing site description forms and maps, preparing data forms, setting up equipment, meeting park requirements, planning the training, and scheduling field crews.

Reviewing the Budget

The Principal Investigator will work with the Network Coordinator each year to review the budget and ensure it meets salary, equipment, mileage, and miscellaneous field expenses. In the foreseeable future, the Klamath Network will implement a cooperative agreement with the Klamath Bird Observatory (KBO) that outlines the funding available to conduct all fieldwork, analysis, and report writing. Under the cooperative agreement, task agreements will be completed no later than one month prior to the start of the field season.

Hiring the Field Crew

Point Count Surveys

For the initial years of this program, KBO will provide the Project Leads, technicians, and interns. If at all possible, priority consideration should be given to previous years' Project Leads and technicians, to maximize year-to-year consistency in field operations and methods.

Hiring the Field Lead

If the Project Lead is to be a seasonal employee, rather than year-round staff member, then the Project Lead recruiting process should begin in late November or early December of the preceding year. Qualities to seek in potential Project Leads include the following:

1. Proficiency at identifying western landbirds by sight and sound.
2. Bird survey experience, preferably conducting point counts with distance estimation.
3. Substantial backcountry orienteering and backpacking experience.
4. High level of physical fitness.

5. Familiarity with one or more of the KLMN parks.
6. Familiarity with plant communities in the Klamath Region.
7. Leadership experience.
8. Strong organizational skills.
9. Ability to get along well with others in a field crew setting.
10. Knowledge of (or preferably, certification in) wilderness first aid.
11. Possession of a reliable vehicle. Note that unless NPS vehicles are available for field work, all members of the crew will need to provide personal vehicles.
12. Ability to manage field crews for long periods of time.

Once selected, the Project Lead should review the protocol and discuss any questions with the Principal Investigator.

Hiring the Technicians

Recruitment of the technicians should begin by late December of the preceding year. As with hiring the Project Lead, initiating the recruitment process early is critical for ensuring that well qualified candidates can be found. Although the technicians do not need to have the same level of experience, nor all of the required skills, as the Project Lead, similar general qualities should be sought:

1. Nearly proficient at identifying western landbirds within the KLMN by sight and sound, or be proficient at identifying landbirds of other regions by sight and sound and be able to demonstrate enthusiasm and ability to learn to identify new species. If a full pre-season training session is planned (SOP #2: Training Observers), then this requirement may be relaxed *slightly*.
2. High level of physical fitness.
3. Ability to get along well with others in a field crew setting.
4. Bird survey experience, preferably conducting point counts with distance sampling. If a full training session is planned, this requirement can be eliminated. However, experience with some kind of formal data collection is still highly desirable.
5. Backpacking experience and proficiency at backcountry orienteering. The orienteering requirement may be waived if orienteering will be emphasized during training.
6. Familiarity with one or more of the KLMN parks.
7. Familiarity with plant communities within the Klamath Region.
8. Knowledge of (or preferably, certification in) wilderness first aid.
9. Possession of a reliable vehicle. Note that unless NPS vehicles are available for field work, all members of the crew will need to provide personal vehicles.

While the first three of the above qualities should be considered mandatory, the others are desirable but not strictly required.

Soon after being hired, technicians should be sent the following:

1. A written description of expectations, duties, and responsibilities, to be signed and returned.
2. A list of all bird species likely to be encountered during the field season (SOP #2: Training Observers).

3. A list of required and recommended resources for bolstering their bird identification skills prior to and during the field season.
4. A list of required and recommended personal equipment.
5. A copy of the Landbird Monitoring Protocol.

Mist Netting

If at all possible, priority consideration should be given to previous years' Project Leads and interns, to maximize year-to-year consistency in field operations and methods. Once selected, the Project Lead, especially if new, should review all relevant sections of the protocol and discuss any questions with the Principal Investigator.

Hiring the Field Lead

The Project Lead will have an identified liaison at Oregon Caves National Monument (usually the lead park wildlife biologist or resource specialist) that will be the key contact for planning and logistics. If the Project Lead is to be a seasonal, rather than year-round, staff member, then the Project Lead recruiting process should begin in late November or early December of the preceding year. Qualities to seek in potential Project Leads include the following:

1. Proficiency at identifying western landbirds by sight and sound.
2. Mist netting experience (preferably certified as a Bander and Trainer by the North American Banding Council).
3. High level of physical fitness.
4. Leadership experience.
5. Strong organizational skills.
6. Ability to get along well with others in a field crew setting.
7. Knowledge of (or preferably, certification in) wilderness first aid.
8. Possession of a reliable vehicle.

Hiring the Interns

Recruitment of interns should begin by late December of the preceding year. As with hiring the Project Lead, initiating the recruitment process early is critical for ensuring that well qualified candidates can be found. Although the interns do not need to have the same level of experience, nor all of the required skills, as the Project Lead, similar general qualities should be sought:

1. Some experience with bird identification and strong interest in ornithology.
2. High level of physical fitness.
3. Ability to get along well with others in a field crew setting.
4. General fieldwork experience.
5. Knowledge of (or preferably, certification in) wilderness first aid.
6. Possession of a reliable vehicle. Note that unless NPS vehicles are available for field work, all members of the crew will need to provide personal vehicles.

While the first three of the above qualities should be considered mandatory, the others are desirable but not strictly required.

Soon after being hired, interns should be sent the following:

1. A written description of expectations, duties, and responsibilities, to be signed and returned.
2. A list of all bird species likely to be encountered during the field season (SOP #2: Training Observers).
3. A list of required and recommended resources for bolstering their bird identification skills prior to and during the field season.
4. A list of required and recommended personal equipment.

Equipment Needs

Equipment will be organized and made ready for the field season by the Project Lead several weeks in advance of the training session. This allows time to make needed repairs and order equipment.

Point Count Surveys

Equipment

The following is the list of equipment needed for each point count surveyor. Asterisks indicate items that crew members are currently required to supply for themselves.

- Binoculars*
- Rangefinder
- Celsius thermometer*
- GPS unit
- Watch or clock timer*
- Clipboard*
- Pens and pencils*
- Red pencils*
- Flagging
- Compass*
- First aid kit*
- Tent*
- Sleeping bag*
- Sleeping pad*
- Stove and fuel*
- Cookware*
- Bag and rope to hang food*
- Water filter*
- Backpack*
- Daypack*
- Oregon Gazetteer*
- California Gazeteer*
- Field notebook

In addition to the equipment specified above, surveyors need field guides to aid them in bird and plant identification. Recommended field guides and reference materials for bird surveys and associated vegetation assessments in the KLMN parks are listed below.

Books

Jensen, E. C., W. R. Randall, R. F. Keniston, and D. N. Bever. 2002. Manual of Oregon trees and shrubs. John and Bell Associates, Oregon. 305p.

Sibley, D. A. 2003. The Sibley field guide to birds of western North America. Alfred A. Knopf, New York. 471p.

Stuart, J. D., and J. O. Sawyer. 2001. Trees and shrubs of California. University of California Press, California. 467p.

CDs

Peterson, R. T. 1999. Peterson field guides: Western bird songs. Houghton Mifflin Audio and Cornell Lab of Ornithology.

Pugh, E. A. 1993. Western Oregon bird songs and calls. Lichen Coop Corporation, Oregon.

Pugh, E. A. 1998. Similar sounding species west side. Lichen Coop Corporation, Oregon.

Pugh, E. A. 1989. Warblers of the West. Lichen Coop Corporation, Oregon.

Mist Netting

Equipment

The following is the list of equipment that will be provided for the mist netting crew.

- 200 size 0A bands
- 200 size 0 bands
- 200 size 1C bands
- 200 size 1 bands
- 200 size 1B bands
- 200 size 1A bands
- 200 size 2 bands
- 50 size 3 bands
- 10 size 3B bands
- 10 size 3A bands
- 10 size 4 bands
- 10 size 4L bands
- 10 size 5 bands
- 10 size 5L bands
- 10 size 6L bands
- 2 size 0-1A banding pliers
- 1 size 2-3A banding pliers
- 1 size 3B-4 banding pliers
- 2 size 15 cm wing rulers
- 2 size 30 cm wing rulers
- Calipers
- Leg gauge
- 2 Mechanical pencils, 0.7 mm
- Extra pencil lead
- 2 Pencils
- Pencil sharpener
- 2 Permanent markers
- 3 Scissors
- 2 Hummingbird food bottles
- 4 Sugar packs
- Scotch tape
- 2 Lighters
- Water bottle
- Net repair kits
- SL4 high intensity flashlight
- 2 Optivisors
- Making tape
- Camera
- 3 Headlamps
- Electronic scale
- Weighing cups
- 12 AA batteries
- 8 C batteries
- 4 Nine-volt batteries
- 10 one quart Ziploc bags
- Clip board
- 40 Coin envelopes for feather collection
- ¼” Masking tape
- Binder
- 20 Journal forms (in data binder)
- 20 Banding data entry forms (in data binder)
- 4 Empidonax data entry forms (in data binder)
- 40 Area search forms (in data binder)
- 8 Vegetation survey forms (in data binder)
- 1 Site description form (in data binder)
- Site map (in data binder)
- Oregon Gazetteer road map
- Monitoring handbook
- Bird topo and data codes
- Sunrise chart
- Beaufort wind scale
- Skull ossification dates

- Species code list and recommended band sizes
- Tabular Pyle 2002
- Sibley 2000
- Pyle ID Guide to North American Birds 1997
- 3 Two-way radios
- 15 nets, 36 mm, 12 m
- 4 nets, 61 mm, 12 m
- 40 Swivel snap shackles, ¾”
- 15 Net bags
- 9 Six-foot sections extra rope
- 24’ Length extra rope
- Flagging tape
- Hand clippers
- 40 8x10” Bird bags
- 6 10x14” Bird bags
- 4 each Clothespins labeled # 1-13
- 2 each Orange clothespins labeled # 1-13
- Insulated bag
- 12 Hand warmers
- First aid kit
- Chemistry stand
- Tarp
- 3 Pairs gloves
- Hand saw
- Hedge shears
- Mallet
- 4 18x3/8” Rebar
- 4 12x3/4” PVC
- Duct tape
- 4 Connectors for short poles
- 3 Folding chairs
- Roll-up table
- 8 Extra short net poles
- 18” Machete
- Long-handled loppers

In addition, each member of the mist netting crew will need to provide the following equipment for themselves:

- Binoculars
- Tent
- Sleeping bag
- Sleeping pad
- Stove and fuel
- Cookware

Recommended field guides and reference materials for mist netting in the KLMN parks are listed below.

Books

Jensen, E. C., W. R. Randall, R. F. Keniston, and D. N. Bever. 2002. Manual of Oregon trees and shrubs. John and Bell Associates, Oregon. 305p.

Pyle, P. 1997. Identification guide to North American birds, Part I. Slate Creek Press. Bolinas, California. 732p.

Sibley, D. A. 2000. The Sibley guide to birds. Alfred A. Knopf, New York. 544p.

Stuart, J. D., and J. O. Sawyer. 2001. Trees and shrubs of California. University of California Press, California. 467p.

Ralph, C. J., G. R. Geupel, P. Pyle, T. E. Martin, and D. F. DeSante. 1993. Handbook of field methods for monitoring landbirds. Gen. Tech. Rep. PSW-GTR-144. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture. 41p.

Sakai, W., and C. J. Ralph, editors. 2003. The Tabular Pyle. Klamath Bird Observatory, Ashland, Oregon.

CDs

Peterson, R. T. 1999. Peterson field guides: Western bird songs. Houghton Mifflin Audio and Cornell Lab of Ornithology.

Pugh, E. A. 1993. Western Oregon bird songs and calls. Lichen Coop Corporation, Oregon.

Pugh, E. A. 1998. Similar sounding species west side. Lichen Coop Corporation, Oregon.

Pugh, E. A. 1989. Warblers of the West. Lichen Coop Corporation, Oregon.

Prepare Site Descriptions and Maps

A folder for each point count route and mist netting site should be developed and include a site description and map. Field site descriptions are completed by surveyors the first year a field site is surveyed. Site descriptions include directions to the site, UTM coordinates in NAD 83 Zone 10, and a written description to help locate the survey stations. If there is more than one site description form, they should be stapled together with the most recent on the top. The map of the field site should be sufficient to navigate from the parking spot to all of the survey stations and should include nearby roads or landmarks. All of this information will be duplicated and kept in a binder at the office, for reference and to provide replacements, if necessary. In addition, site descriptions, driving directions, and UTM locations will be entered into the Klamath Network Landbird database. It is the responsibility of the Project Lead to make sure project folders are complete prior to the start of the field season and at the end of the field season.

Prepare Data Forms

An adequate number of data forms to fulfill training needs and provide for the first 7-10 day tour (at least) should be printed or copied. Additional data forms will need to be copied or printed throughout the field season, if they are not produced in advance. Extra field forms from the previous years' field work will be stored in the project folder. Care should be taken to ensure the old field forms represent the current data collection parameters before using them.

Prepare UTM Coordinates

The Project Lead will prepare the GPS units for the field season. Using the Waypoint Express extension in Arcview or ArcGIS, the Project Lead will create a waypoint text file of UTMs for each point count station and mist net. A separate text file should be created for each park. The Project Lead will upload the appropriate UTMs onto each surveyor's GPS unit. Refer to SOP#3: Using the Global Positioning System for additional details.

Park Requirements

In January, the Project Lead should communicate with the Network Contact to determine the contact person for each park**.** The Project Lead should contact each park to inform them of the survey schedule and to determine:

1. Whether housing or campground sites are available.
2. Whether permits are necessary to camp in the backcountry.
3. Whether keys are needed to access survey sites.
4. Whether the standard flagging and marking scheme is acceptable.
5. Whether permits are needed to conduct research in the parks.

Prepare for and Schedule Training

The training sessions should be scheduled and materials should be prepared as detailed in SOP #2: Training Observers.

Scheduling Field Work

Point Count Surveys

Breeding season point counts should be conducted during the months of May, June, and the first week in July. Lower elevation sites should be surveyed earlier in the season and higher elevation sites later in the season. By sampling the Network's low elevation sites first, then the mid elevation sites, and finally the high elevation sites, crews can ensure that sampling coincides with the peak of breeding activity for most species within each elevation zone. Point count routes should be scheduled at the onset of the field season, such that a surveyor will go out on a field trip for 10 to 20 days at a time. The park contact should be consulted as to whether any bridges have been washed out and especially if heavy snow pack or other factors might alter the accessibility of any routes. As much as possible, routes should be scheduled within a 7-day window each year and the schedule should be arranged to minimize travel requirements. Unpredictable weather precludes the scheduling of sampling events to specific annual dates, as point counts cannot be conducted in the rain. The schedule must be flexible enough to account for survey days lost to weather or other unforeseen problems. After each field trip, the schedule should be revised if necessary. A tentative schedule of the entire season will be given out at the beginning of the season, but it is subject to change and only the work assigned for a single field trip should be completed before further instruction from the Project Lead.

Mist Netting

Mist netting to be conducted during the breeding season (May-August) should be scheduled at the onset of the field season, such that a field crew will go out on a station visit once every 10-day cycle (cycles beginning May 1) beginning within the forth or fifth cycle (determined by melt of snow cover). Consecutive efforts at a station during the breeding season should be separated by at least 3 days. Mist netting to be conducted during the fall migration season (August-October) should be scheduled at the onset of the field season, such that a field crew will go out on a station visit once every 7-day cycle (cycles beginning mid-August and ending mid-October). Consecutive efforts at a station during the migration season should be separated by at least 1 day. The schedule must be flexible enough to account for station visit days lost to weather or other unforeseen problems. After each station visit, the schedule should be revised if necessary. A tentative schedule of the entire season will be given out at the beginning of the season, but it is subject to change.